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THE SPECIES OF *TEMNOSTOMA* RELATED TO *BOMBYLANS* LINNÉ (SYRPHIDAE, DIPTERA)

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Although it has long been recognized that *Temnostoma bombylans* Linné does not occur in North America there has been confusion concerning the identity of this and related species. Four species related to *bombylans* have been described from America but their separation is not easy. In order to facilitate the identification of the species in the genus I present the following key.

TABLE OF SPECIES

1.—Scutellum not yellow pollinose.....2.
Scutellum yellow pollinose (Middle States and South).....*pictulum* Williston.
2.—Fourth abdominal segment with a median subrectangular black spot and a transverse oval one on either side.....*alternans* Loew.
Fourth abdominal segment differently marked.....3.
3.—Pale spots on the thoracic suture conspicuously separated from each other.....*venustum* Williston.
Pale spots contiguous, appearing as a transverse stripe on either side of the mesonotum.....4.
4.—Abdomen with three or four yellow fasciae, all of nearly the same width.....7.
Abdomen with more than four yellow fasciae, the apical segments actually yellowish or grayish, with a median, uninterrupted black fascia.....5.
5.—Scutellum yellow pilose.....6.
Scutellum black pilose (N. Ontario).....*nipigonensis* Curran.
6.—Femora wholly yellow..*excentricum* Harris.
At least the anterior femora black on the basal third or more..*vespiforme* Linnaeus.
7.—Apical abdominal segments with pale yellow hair dorsally.....*balyras* Walker.
Apical abominal segments with almost all black hair dorsally.....8.
8.—Posterior femora yellow on the basal fourth or more; hind trochanters yellow.....9.
Posterior femora at most with the immediate base reddish; hind trochanters brownish; eyes of ♂ contiguous (Europe).....*bombylans* Fabricius.
9.—Middle tibiae wholly yellowish.....10.
Middle tibiae brown on apical half.....*barberi* Shannon.
10.—Posterior four femora usually mostly black; the hind tibiae usually brown on apical half or more; front of ♀ with pollinose fascia below.....*trifasciata* Robertson.
Posterior four legs usually all reddish yellow; female usually with only three yellow pollinose fasciae on abdomen, the front never with a broad, entire bright yellow fascia above the antennae.....*acra*, n. sp.

Temnostoma balyras Walker

Syrphus balyras WALKER, 1849, List Dipt. Brit. Mus., III, p. 577.

This species has been placed as a synonym of *bombylans* Linné, but, like all the other known American species, it has the eyes of the male conspicuously separated. It is one of two species having the hair on the apical one or two abdominal segments yellow on upper surface. In the males the legs are extensively black, the hind femora being always more than half black. In the females the legs are much more extensively pale, the posterior four legs sometimes being almost all reddish and yellowish.

Temnostoma barberi Shannon

Related to *trifasciata* Robertson but distinguished from this and other species by having a black or brown band occupying almost the apical half of the middle tibiae in both sexes. I have before me two paratypes from Ithaca, New York.

Temnostoma trifasciata Robertson

ROBERTSON, 1901, Can. Ent., XXXIII, p. 285.

This species is rather rare in collections, although it is reported from many places in the United States and Southern Canada. Few of the published records actually refer to it, the species having been misidentified. The original description was very brief and

did not mention the color of the legs, although they are colored as in the female of *balyras* Walker. The chief character mentioned was the presence of only three pale pollinose fasciae on the abdomen although there is usually an indication of a fourth fascia on the base of the fifth segment. In a paper published by Malloch it was pointed out that the fourth and fifth abdominal segments are black pilose in *trifasciata*. This led to the recognition of all specimens having this character as *trifasciata*, and has resulted in the misidentification of the species.

T. trifasciata is easily recognized in the female sex. There is a broad fascia of bright yellow pollen above the antennae, none of the other species possessing this character. In the male the almost wholly reddish posterior legs will usually distinguish it but there are probably specimens in which there are blackish bands. In both sexes the pale pollinose fasciae on the anterior three-fifths of the mesonotum are wider, less narrowly separated from each other and are apparently longer than in *acra*, n. sp., the only species with which it is likely to be confused.

The specimens before me are from widely separated regions: Illinois, Kansas, Maryland and Long Island, New York.

Temnostoma acra, new species

Black, the abdomen with three or four yellow pollinose fasciae; wings brown in front; posterior femora and tibiae usually extensively black; front of female without transverse pollinose fascia. Length, 10 to 13 mm.

MALE.—Head black, with yellowish cinereous pollen, a triangle above the antennae, the space separating the upper and lower sections of the front, the front behind the anterior ocellus, the cheeks and a broad median facial vitta that expands above, bare and shining. Pile pale yellow. Eyes rather widely separated. Antennae pale brownish yellow.

Thorax black, rather dull, with yellow pollinose markings as follows: the humeri, a stripe extending over the suture, usually a vitta above the wings, rarely a spot in front of the sides of the scutellum and a broad stripe on the posterior border of the mesonotum. Pile yellow, on the disc of the dorsum mixed with short black hairs which predominate behind the suture.

Legs black or brown; trochanters, tips of the femora, basal fourth to half of the front and middle tibiae, the basal two and one-half segments of the posterior tarsi, the middle tibiae and tarsi and the basal third or more of the posterior femora yellowish. Pile yellow, black on the anterior tibiae and tarsi and on the apical two or three segments of the remaining tarsi.

Wings brownish in front of the spurious vein, paler toward the base in front, cinereous hyaline posteriorly. Squamae white. Halteres yellow.

Abdomen black or blue-black, with yellow fasciae; first segment and entire lateral margins shining blue-black. Second segment opaque black on more than the basal half, with a scarcely arched, broad yellow fascia lying a little behind the front margin, narrowest in the middle, gently widening laterally. Third segment opaque on less than the basal half, the dull black bands narrower than the yellow fascia which is narrowed and curved back toward the sides. Fourth segment with only a narrow opaque band behind the more curved yellow fascia, opaque in front of it. Pile black, yellowish on the first segment, basal third of the second and on the sides of the fourth, the genitalia sometimes with some yellowish hairs intermixed with the black ones. Venter black, the incisures narrowly yellowish.

FEMALE.—Front black or blue-black, mostly rather dulled, with indication of a spot of pale pollen in the middle of the anterior fourth, the sides broadly yellowish or cinereous pollinose to the level of the anterior ocellus. Legs often as in the male but usually more extensively pale, in one specimen the black of the middle and posterior legs replaced by reddish. There is less opaque black behind the pollinose bands and there is a basal pollinose fascia on the fifth segment which curves back toward the sides. Sides of third and fifth segments pale pilose.

TYPES.—Holotype male, allotype female and female paratype, Avon, Conn., June 6, 17, 18, 1929 (Curran); four males and one female, Tuxedo, New York, June 26, 30, 1928 (Curran); male and female, Franconia, New Hampshire (Mrs. Slosson); female, Mount Washington, New Hampshire (Mrs. Slosson); two females, Hemlock Falls, New Jersey, May, June (A. J. Weidt); female, Douglas Co., Kansas, June 12, 1923 (W. J. Brown); forty-three specimens of both sexes from Canada: Nova Scotia, Quebec, Ontario and British Columbia, and one specimen from Pennsylvania.

Temnostoma obscurum Loew

LOEW, 1864, Berl. Ent. Zeitschr., VIII, p. 67.

This species resembles *balyras* Walker in having the pile on the apical abdominal segments pale in color but differs in having a tuberculate face in the male. The type

came from western Canada and there is no doubt that it differs markedly from the common eastern species. The female is at present unknown but I have before me two specimens from northern Ontario that may belong here. They differ from *balyras* in having the front black pilose (instead of yellow) and seem to be slightly more robust. It is possible that they might represent a different and undescribed species.

I am indebted to Mr. R. C. Shannon for information concerning the type of *obscurum*, as well as for other information concerning the various species.